

Boat-ship depicted in Rock art, Stone art and paintings of South India

K. V. Ramakrishna Rao, I.R.S

B.Sc., M.A., A. M. I. E., C. Eng (I), B.L.,

The paper, Boat-ship depicted in rock-art, stone art and paintings of South India, in “Indian paintings and Arts through Ages”, edited by J. Soundarajan, University of Madras, Chennai, 2018, pp.171-178.

Assistant Commissioner of Customs,
Central Excise and Service Tax.
Independent Researcher.
Director – Institute for the Study of Ancient
Indian Arts and Sciences

25 (Old.9), Venkatachala Iyer Street,
West Mambalam, Chennai – 600 033
Cell: 98402 92065
e- mail: kopallerao@yahoo.co.uk

Introduction: The Ancient Tamizhagam or South India had / has been located in the strategic position of ancient India that is Bharat. Here, “South India” includes present states of Andrapradesh, Telangana, Tamilnadu, Kerala and Karnataka. As the Oceanic waters had / have been there all the three sides, their seafaring and maritime activities are implied, studied and confirmed with material evidences. When the Greeks and Romans were trading with the South Indian people, again, it is meant that the latter were also sojourning to the places of the former, implying that the material remnants must have been there in all African, Mediterranean, European and American coasts. After all, the requirements of goods and services of South Indians were required or in demand are proven by the Mediterranean connections. Thus, the seafaring and maritime activities must have been recorded in their material and non-material cultures. The evolutionary processes involved in the shipping technology are studied in this paper taking the pictures of various types of boats and ships depicted. A study of Rock art, Stone art and paintings of South India show that boat and ship shapes have been depicted characteristically.

Kizhvalai boat and the chronology gap: Kizhvalai¹ rock paintings depict men standing on a boat, as they have been opened to nature, the details have not been clear and are dated to c.1000-500 BCE, and. Government of India issued a special postal cover on 08-10-2011 under “Maritime Heritage of Tamilnadu” during SIPEX 2011 - Philately exhibition organized by SIPA - South India Philatelists' Association, Chennai, recognizing its importance. The cover design depicts the rock art / paintings at Keelvalai, in which people standing on a small boat with pole dates back to 1000 - 500 BCE and drawn using red ochre. Even though these sites have been known by archaeologists for more than twenty years, they have been near granite quarrying sites and might disappear in due course. Whether the depicted had been a “simple boat” or “Kattamaran”, the navigational capabilities of the ancient South Indians and Tamils in particular has been clearly established. The people of ancient Tamizhagam could not

¹ Kilvalai or Kizhvalai, is a hamlet in Tirukkoyilur (Tamil: கிழவலை) taluk in Villuppuram district, Tamilndu.

have been sleeping quite without building any ship and sailing across the “Eastern, Western and Southern Oceans,” as otherwise, the Sangam poets would not have recorded about the maritime trade and foreigners coming to the ports of South India. Therefore, the chronological gap for boat / ship building has to be tackled. The existence of rock paintings coinciding with the megalithic culture is intriguing point to study in chronological aspect.

Azhagankulam ship and mutual and reciprocated maritime connections:

Another evidence is from the excavations of Azhagankulam [Mandapam village, Ramanathapuram District], where, one of the potsherds contain a ship graffiti. As it was found with rouletted ware and Amphorae jar pieces with Tamil Brahmi letters assigned to first cent. BCE, it is considered as “Roman ship.”² *“On the basis of the occurrences of the potsherds of the Mediterranean origin and the coins of Roman Emperors, it can be presumed that a Roman settlement might have existed at Alagankulam in the early centuries of Common era, as at Arikamedu.....after the decline and fall of the Roman Empire, the commerxcal activities collapsed, and Alagankulam lost its importance after 5th century CE.....it was once a port of the eastern coast of Tamilnadu during 500 BCE to 1200 CE,”* T. S. Sridhar surmises to conclude so³. As for as the dating of the “Roman ship” is concerned, it is dated up to 4th cent CE⁴. However, the masted ship with rowing rudder and other controls depicted point to Indian ship. Till medieval period, there was no doubt about Indians using their own ships, as they were having such capabilities. It is ironical, here also to note that no counterpart of Tamilzgagam or South Indian ship has been found in the middle-east or even on the Malabar or Coromandel coast.

Indian ivory sculpture found at Pompeii: Had the maritime activities been of commercial nature, the trade must have been mutual, then, Indian coins, pottery, jewels and other goods must have been found on the coasts of Mediterranean sea. Incidentally, The TN archaeologists do not mention about such material evidences found. To cite another example, the material evidence – the so-called Sri or Lakshmi, the ivory Indian statuette recovered from Pompeii. The scholars⁵ vaguely note that *“....it might be dated somewhere between the end of the first century BC and the start of the first century AD”*. However, the simple façade from where this was found has been dated to the Samnite era (3rd-2nd cent BC). And what about the artistic standrards of the statuette? To quote⁶, *“On the whole, the statuette provides evidence of remarkable workmanship, for the graceful movements and the calm expression of her face”*. In other words, during the period 300-200 BCE, the Romans were puurchasing / importing ivory

² T. S. Sridhar, **An ancient Roman Port City of Tamilnadu**, Dept of archaeology, Govt. Of Tamilnadu, 2005, p.40

³ T. S. Sridhar, **An ancient Roman Port City of Tamilnadu**, Dept of archaeology, Govt. Of Tamilnadu, 2005, Introduction, p.ix, p.4.

⁴ Begley, Vimala. **"The Dating of Arikamedu and its bearing on the archaeology of early historical South India."** South Indian Horizons, JL Chevallard and E. Wilder (eds), Institut Français de Pondichéry/Ecole Française d'Extrême-Orient, Pondicherry (2004): 513-537.

⁵ A. Maiuri, **Stattuetta eburnean di arte indiana a Pompei**, Le Arti, Vol.I, 1939, pp.11-115.

J. PH. Vogel, **Note on an Ivory Statuette from Pompeii**, Annual Bibliography of Indian Archaeology, Vol.XIII, 1940, pp.1-5.

⁶ R. M. Cimino and F. Scialpi, **India and Italy**, Is.M.E.O, Rome, 1974, pp.28-29.

statues from Imdia. Therefore, it cannot be categorically concluded that the ancient port Azgankulam was “Roman,” as the Roman city Pompeii cannot be called as Indian city, just because, Lakshmi figurine was found there⁷.

Vijaya ships must have gone to Lanka crossing the coasts of the ancient Tamizhagam: The Ships Landing of Prince Vijaya in Sri Lanka depicted in the Ajanta Frescos have been dated to 543 BCE. One Ajanta painting of a later date depicted horses and elephants aboard the ship which carried Prince Vijaya to Sri Lanka. In other words, had ships been sailing to Sri Lanka, definitely, they must have crossed the eastern coasts of ancient Tamizhagam. Of course, the Sangam literature vividly depicts the ports and maritime activities, though, such material evidences are not available. Therefore, non-availability of material evidences cannot be taken to deny the fact of navigational capabilities of the ancient Tamils. Even, Sanghamittā (Sanghamitrā in Sanskrit) and her brother Mahinda, daughter and son of Emperor Ashoka (304 BCE – 232 BCE) went to Sri Lanka to spread the teachings of Buddha at the request of King Devanampiya Tissa (250 BCE – 210 BCE). In other words, they must have crossed the ancient Tamizhagam, but, no such event has been recorded in the Sangam literature, though, the Sangam poets had recorded about the gold buried under the banks of Ganges, Nandas and Mauryans. If “Paditruppattu” has to be believed, “Kadal pirakoottiya Senguttuvan” reduced the sea-rising by suitable blocks, defended his maritime territories and even sent a cavalry with navy across the oceaning waters⁸. Therefore, historians have to consider the chronological gap about the absemce of material evidences during the period.

The Pichili Trader vessel and Ajanta representation: Ivon A. Donnelly⁹ has pointed out that the Pechili trader was probably the oldest type of ocean-going Chinese junk and they resembled the representations found in the Ajanta cave paintings in India and as well as the ones depicted in the sculptures of Borobuddur. James Hornell too notes as follows, while he discusses about the usage of “eye” and goddess depicted on the bow of the ship with other decoration¹⁰: *“The pictures of a three-mast ship and of a Royal barge on the walls of the Ajanta caves (A. D circa 600) show that this custom was in use formerly-probably habitual. The Greeks, Romans and ancient Egyptians followed the same custom, and although it has died out in India save at this out-of-the-world- spot. It flourishes among the junks and samparans of China and Indo-China. The custom is not followed by the peoples of Malaysia – possibly because of Muhammedan influence”*. This clearly points to the fact that the Chinese must have derived such design from the Indians / the Pallavas / the Cholas. The SEA nations have

⁷ The Pompeii Lakshmi is an ivory statuette that was discovered in the ruins of Pompeii, which was destroyed in the eruption of Mount Vesuvius 79 CE. She was found by Amedeo Maiuri an Italian scholar in 1938. The statuette has been dated to the first-century CE.

⁸ □□□□ □□□□ □□□□□□□□ □□□□, □□□□ □□□□□□□□ □□□□ □□□□□□□□ – □□□□□□□□□□□□ 41; □□ □□□□ □□□□ ... □□□□□□□□ □□□□□□□□ □□□□ □□□□ □□□□□□□□□□ □□□□□□□□ □□□□□□□□□□ – □□□□□□□□□□□□ 45 and □□□□ □□□□ □□□□□□□□, □□□□□□□□ □□□□□□□□ □□□□□□ □□□□□□□□□□ □□□□□□□□. – □□□□□□□□□□□□ 46.

⁹ Ivon A. Donnelly, ***Chinese Junks and other native craft***, Earnshaw books, Hong Kong, 2008 (Reprint of 1924 edition), p32.

¹⁰ James Hornell, ***The Origin and Ethnological Significance of Indian Boat Design***, pp.42-43.

been at strategic location for the Chinese junks going to African and Arab countries to sell their goods to European countries. Similarly, for Indian ships going to China, they play crucial role. During first centuries, the Indians must have exercised total control over the SEA area and later during the medieval period the Chinese started competing with the Cholas. Much of the Cholas-Srivijaya-Chinese conflict could be analyzed in the context easily.

Ships depicted in the Satavahana coins compared with Azghagankulam graffiti: The introduction of “ship-type coins” has been attributed to the Sathavahanas¹¹, who were ruling the south during c.200 BCE onwards, just touching the northern boundaries of the Tamils of the Sangam period. However, such coins have also been issued by Salankayanas, Kurumbas and Pallavas. Incidentally, the depiction of two-mast ship appears to be a standard in the ancient Tamizhagam, as such depiction is found on the Alangulam pottery also. Vasishthiputra Pulumavi and Yajna Sri Satakarni have issued Ship-type coins depicting two-mast ships sailing on wavy oceanic waters under partially clouded sky¹². Initially, there had been some discussion among the western scholars about the identification of the King who issued the coins¹³. These 'ship' coins suggest that Pulumayi was accompanied in some of his campaigns by a fleet of war-boats, and they were issued to commemorate a naval victory over the people who inhabited Tondamandala region, in which the coins were found. This inference will be considerably strengthened if we remember the fact that the coast-region in question was inhabited in ancient times by a people who were known to Tamil literature as the *Tiraiyar* (lit. sea-people). The coins of Pulumavi have been recovered between Madras and Cuddalore proving the existing of ports in that area. The coins of the latter were found in Maharashtra. Here, under the two-mast ship fish and conch are also depicted. The other parts of ship – have also been clear. The Salankayanas have also issued similar coins proving that they too had seafaring activities and naval dominance. Interestingly, their ships portray some parts of the ship on both sides under water. Though, they could be easily interpreted as oars, but the shapes negate it. In another coin, a roughly circular shape object attached to one side of the ship. Then comes the ship-type coins issued by the Pallavas¹⁴.

¹¹ I. K. Sarma, **Coinage of the Sathavahana Empire**, Agam Kala Prakashan, New Delhi, p.227.

¹² E. J. Rapson, **Catalogue of the Indian Coins, Introduction, pp. ixxxi-ixxxii.**

....., **Catalogue of the Coins of the Andhra Dynasty**, London, 1908, p.34ff.

V. V. Mirashi, **A Ship-type Coin of Yajna Satakarni**, Journal of the Numismatic Society, Vol.III, Pt.I, 1941, pp.43-45.

R. Krishnamurthy, **Pallava Coins**, Garnet Publishers, Chennai, 2004, pp.46-49.

¹³ Prithwis Chandra Chakravarti, **Naval Warfare in ancient India**, The Indian Historical Quarterly, Vol.4, No.4 1930.12, pp.645-664.

In his article in Z. D. G. (1903, p.613) as well as in his Early History (4th Ed., p. 223)

V, A. Smith refers these coins with the 'ship' type to the reign of Yajna Sri.

Dr. H. C. Raychaudhuri in his **'Political History of Ancient India'** does the same.

But Prof. Rapson, who has made a special study of Andhra coinage, remarks that on the solitary specimen on which the traces of the coin-legend admit of any probable restoration "the inscription appears to be intended for **Siri-pu (luma)** visa (No, 95, p, 22; Pl. V.). This restoration is not altogether satisfactory; but there is no doubt about the first syllable of the name **Pu-**, and, as the next syllable may well be **-lu-**, it is almost certain that the coin was struck by **Pulumayi**"

¹⁴ R. Krishnamurthy, **Pallava Coins**, Garnet Publishers, Chennai, 2004, pp.46-49.

Ships depicted in the Pallava coins: The Pallava coins also depict both one-mast and two-mast ships and also single-mast boat with Nandi / bull symbol on the observe. The picture nos. are given as appearing in the book of R. Krishnamurthy¹⁵ for convenience. In the coins with sl.nos. 25 and 26, the oars are very clear. No.35 also shows two-mast ship. In 36, part of a ship is depicted with a lengthy devise underneath with three rectangular scooped out holes. It could not be an anchor, as it has been depicted with full length of the ship. Sir Walter Elliot¹⁶ gives interesting description for the two-mast ship depicted in Pallava coin: *“Two-mast ship like the modern coasting vessel or d’honi, steered by means of oars from the stem”*. About this ship-type coins, he records that there were two and both were found missing and then, one recovered. In his words¹⁷, *“This is one of the two coins mentioned on p.36, supposed to have been lost. It was discovered in arranging the present series, but the other is still missing”* (1884). In another Pallava coin (numbered as 55 in plate II), he comments that observe has ‘a horse facing right, with a pellet in front’ and reverse ‘indistinct’. But, the reverse depict a two-decked ship, perhaps which he did not want to acknowledge, as *it would be too modern to be imagined in the Pallava period!* In fact, he calls them as “Kurumbas”. These coins were recovered from the coastal Labis and Merkayars in exchange for useful necessities. About the coins, he describes as follows¹⁸:

“Those of native origin are small, irregularly rounded pieces of thin copper, bearing generally the device of a bull, with occasionally some letters in Cave-character on the observe; and on the reverse, a tree, ship, star, crab, fish etc. but, their most remarkable characteristic is the elegance and delicacy of form with which the animals are designed, indicating a considerable advance of art; and in this respect contrasting favourably, but with the Andhra money on the one side, and with the Chola, and Pandyan currencies on the other” (emphasis added).

Thus, he could have noted the similarity of coins of Cholas and Pandyas, besides Andhras and Kurumbas, as implied in his argument of contrast of art. Coming to Cholas of the material period, the available / reported coins depict only stars, fish prominently (these are specifically mentioned in the context). Therefore, it is intriguing to note that there are no coins issued by Rajaraja or Rajendra either to commemorate their oversea expeditions or victories or at least depict their naval capabilities on their coins. When so many metallurgical highly skilled bronzes are attributed to the Cholas, it is also intriguing that they issued fewer coins. But, considering the disappearance of coins from India¹⁹, it can be surmised that such coins could have gone to the foreigners (just like Leiden Copper plates) and in the possession of private collection (Indian coins are offered for sale in internet).

¹⁵ R. Krishnamurthy, **opt.cit.**, Photo courtesy from: www.chennaiamuseum.org/.../O4/O1/coin6.htm

¹⁶ Sir Walter Elliot, **Coins of Southern India, Prithvi Prakashan**, Varanasi, 1970, p.152.

¹⁷ Ibid, p.152B.

¹⁸ Ibid, p.35.

¹⁹ K. V. Ramakrishna Rao, **The Appearance and Disappearance of Coins in Ancient India**, Numismatica India (Festschrift to Prof. D. Raja Reddy), Research India Press, New Delhi, 2011, pp.264-279.

The Kadakkarapally boat recovered in 2004 dated to 950-1250 CE: In 2004, the Kadakkarapally boat was recovered from Kerala dated to 10th to 13th cent CE. Radiocarbon dating done in the United States yielded a date of 1020 to 1270 CE. This corroborates the C-14 date derived by a lab in India that indicated a date of 920 to 1160 CE²⁰. Incidentally, this coincides with the rule of imperial Cholas [950-1250 CE]. So by all probabilities, it could be a Chola ship also, as the inscriptions of Rajaraja Chola recorded about the attack of Chera port at Kanthalur, it could be one such ships attacked. When Beypore has been maintaining kits shipbuilding activities even today, it is not known as to how and why the Cholamandalam could have forgotten it. Of course, Narsapur shipbuilding activities were till, the British banned building high tonnage ships in Indian coasts by Indians.

The Indian ships depicted in the European paintings confess that they were manufactured in India: The European paintings of ships and documents vouchsafe that 800 MTs were built in Kochi around 1512 and they were used by them. Santa Catarina do Monte Sinai, was a higher-castled Portuguese carrack with 140 MTs, launched in 1520, was built at Cochin in 1512, and it was depicted in a painting attributed to Joachim Patinir. Incidentally, in 1524, Vasco da Gama came in this ship to India, in his third voyage. The documents preserved at the Ports of Madras, Bombay and Goa give interesting details about the ships built in Indian ports that were exported to European countries with cargo. The Narsapur peta shipping technology had been well documented, but, now there was no reace of it there²¹. Similarly, the European paintings depicting ships at Pulicat, Madras, Tranqubar, Nagapattinam and other coastal places prove the shipbuilding activities taken place, but, facts were suppressed by unknown reasons. Not only the paitings depict Indian ships, but also, carpenters and wood working exoerts working and using different tools to work with wood, planks etc. Thus, not that technology was forgotten or abandoned, but, the maritime activities were completely taken over by the Mughals and then the European Companies. Just like Narsapur, the evidences have been disappeared. John Lewis Ricardo²² record about the high standards of Indian ships and their sea-fitness even for about 100 years.

“Do not let it be said, “those Indian ships are built for their own coasting trade, and are unfit for long voyages.” The very reverse is the fact, for, generally speaking, they are of a larger tonnage than the average tonnage of British ships. They are built of teak wood, and are the finest ships in the world. “I have seen”, says the witness, “a teak ship that was 80 years old, going to sea, and perfectly seaworthy”.

Though, the British have recorded the excellent techniques of Indians, they have been suppressed from the Indians in history. Thus, when such excellent ship-building

²⁰ Ralph K. Pedersen., **The Kadakkarapally Boat: A Thousand-Year-Old Shipwreck in Kerala, India**, The INA Quarterly 31.2 (2004): 3-9.

²¹ Sanjay Subrahmanyam, “A Note on Narsapur Peta: A 'Syncretic' Shipbuilding Centre in South India, 1570–1700,” Journal of the Economic and Social History of the Orient, 31 (1988), pp. 305–11.

²² John Lewis Ricardo, **The Anatomy of the Navigation Laws**, Charles Gilpin, 5, Bishops gate Street, London, 1847, p.123.

techniques were prevalent even during the British period, it is unimaginable that they were not existence 750-800 years before them.

For further information as to the excellence of Indian ships and of Lascars as seamen, see appendix letter of Captain R. Cogan, J. N.

Considering the importance, his letter is appended as APPENDIX – A. R. Cogan has analysed the quality, economy and easy repair and maintenance and longstanding of Indian ships as compared to the British-built ships²³. The Indian ship-men, sailors, etc., whom they referred to as “Lascars”, had been the best crew-men in the world. They have recorded them characteristically as follows²⁴:

The Late Mr. Soames, before the Committee of 1844, stated, “That going on the East India trade, he would rather have Lascars. In a warm climate you do not require a great number of them than of british seamen. Their great merit is in their orderly conduct; they are as quiet as lambs on board ship” – (619-21).

George Windsor Earl²⁵, who toured the Indian archipelago in 1832-33-34 comprising a tour of the island of Java – visits to Borneo, the Malay Peninsula, Siam and Singapore gives the following interesting details: “The schooner, which was only fifty tons burthen, had been originally a Dutch gun-boat, purchased from the Batavian government, commander, an Englishman, who was the only European on board besides myself; ***the whole of the crew being natives of Eastern India*** (p.2). Here, two facts are brought out – not only the ship was not built by them, but purchased from the Batavian government, but also the entire crew was Indian! They were far better than the British seamen, obedient and conduct orderly, ***‘they are as quiet as lamb on the board’***. This morality and values of Indians were only exploited by the foreigners and enslaved them by their own words.

How the British gave a final death blow to Indian shipping: Elsewhere, I have referred to the instances of taking away "shipping technology" books from India by the Europeans²⁶. The Portuguese got ships built from Indians²⁷. The strategic occupation of Goa by them had been one of the important reasons, as it was the great port of navigating Kadambas. The arrival of Indian ships with Indian merchandise created a sensation in the port of London. Surat (1612), Madras (1639), Bombay (1668), Pondicherry (1674) and Calcutta (1698) thus gradually overshadowed Goa, and took over as the main centers of Indo-European trade. Nevertheless, the Indian (and other

²³ John Lewis Ricardo, ***The Anatomy of the Navigation Laws***, Charles Gilpin, 5, Bishopsgate Street, London, 1847, pp.331-333.

²⁴ Ibid, p.123.

²⁵ George Windsor Earl, ***The Eastern Seas or Voyages and Adventures in the Indian archipelago in 1832-33-34 comprising a tour of the island of Java – visits to Borneo, the Malay Peninsula, Siam & c., also an account of the present State of Singapore with the observations on the commercial resources of the Archipelago***, Wm H. Allen and co, Leandrall Street, London, 1837.

²⁶ K. V. Ramakrishna Rao, ***The Shipping Technology of Colas***, PSIHC, Rajapalayam, 2007, p.342.

²⁷ However, the kept silence of the procurement of Indian ships. Even the websites say that the ships were Indian Portuguese ships etc.

Asian) ship-building industry continued to thrive, as ships built in the ports of the Indian Ocean often matched (or even exceeded) the European-built ships in finish and craftsmanship. The British started introducing several acts and rules to stop the Indian Shipping activities and foreign trade:

- 🌐 The Merchant Seaman Act, 1728.
- 🌐 The Merchant Seaman Act, 1835.
- 🌐 The General Merchant Seamen Act, 1835.
- 🌐 The Mercantile Marine Act, 1850.
- 🌐 The Merchant Shipping Act, 1854-1894. etc.

The British gave a death blow to Indian shipbuilding by a notification issued by East India Company in the Calcutta Gazette (Supplementary) of 29th January 1789 which says “All persons whosoever (Magistrates of the District excepted) are prohibited from making use of, or constructing boats of the following denomination and dimensions after 1st March next:

- 📖 Luekhas 40 to 90 covids length 2 ½ to 4 covids breadth.
- 📖 Jelkias 30 to 70 covids length 3 ½ to 5 covids breadth.
- 📖 Paunehways of Chandpore carrying more than 10 cars.

According to Captain Iwata, founder member of the Association of Sumerian ships in Japan, Beypore²⁸ (an ancient port near Calicut / Kozhikode) had direct links with Mesopotamia and was probably a major stop in the maritime silk route. He believes that Sumerian ships might have been built in Beypore ship-building yard. So when Captain Iwata set out to prove that a maritime trade link did exist between Mesopotamia and other countries, it is to Beypore he came to build his dream ship some years ago. The Sumerian ships must have been built according to a design reportedly recorded in cuneiform Sumerian tablet and preserved at the Louvre museum, *the 3000 tonner is made entirely of wood, the planks are held together by wooden nails and coir yarn with a special glue made of fruit and tree resins are used for additional bonding*. Interestingly, the anchor is hewn out of granite. These are the typical features of ships built at Cochin and Maldives. Beypore is also famous for the construction of the Uru, the traditional Arabian trading vessel. In fact, even now, ships are built at Kozhikode / Calicut (Beypore and Mappad) exported to SEA countries, as they prefer the tradition ships of India.

Conclusion: It is evident and a strong reason to believe that there is no some lacuna in dating archaeological evidences of South India with that of Sangam literature and vice versa, as pointed in the case of ship depicted in rock art and paintings in the case of ancient Tamizhagam and South India.

1. The chronological gaps between the boat-constructing and shipbuilding of South India have to be filled-up by correlating and corroborating other literary, numismatic and technical details.

²⁸ Located at the mouth of the Chaliyar river, Baypore, one of the prominent ports and fishing harbours of ancient Kerala was and important trade and maritime centre. Ancient Beypore was much sought after by merchants from Western Asia, for its shipbuilding industry and the boat-building yard here is famous for the construction of the Uru, the traditional Arabian trading vessel.

2. The Megalithic to Sangam Age; Sangam Age to the rule of Pallavas, Cheras, Pandyas, Cholas and others – the mismatches of chronology and history have to be corrected.
3. The maritime activities have been mutual, reciprocating and competitive in dealing with goods and services. Therefore, Indians could not have been docile, dormant and docked, while others were coming here and going.
4. Dating Tamil-Brahmi script to c.3rd-2nd centuries BCE and state formation thereafter in the Tamizhagam²⁹, whereas, the existence of “civilized culture”, just on the northern boundaries of Tamizhagam point to lacuna in dating the archaeological evidences.
5. Recently, the Sri Lankan Brahmi script has been dated earlier to Tamil Brahmi. Similarly, the Pallava script in the inscriptions of South-East Asian countries have been dated to a “pre-Pallava” period³⁰. Under the circumstances, it is suggested that the existing ancient monuments of Tamizhagam should be dated at par with Andhra counterparts.
6. About the reconstructed “Cholas ship” exhibited at the Tirunelveli museum, mention has been made in my earlier papers³¹. Recently, there have been attempts³² to virtual reconstruction of ships using computer modeling with the available data combining nautical archaeology and computer visualization.

²⁹ Champakalakshmi et.al eds. ***State and Society in Pre-modern South India***, Trissur, 2002. pp. 39 ff., see “Antecedents of the State Formation in South India,” therein.

R. Champakalakshmi, ***State and Economy: South India Circa A. D. 400-1300***, Romila Thapar, ed., Recent Perspectives of Early Indian History (Bombay: Popular Prakashan, 1995), pp. 266-308. 42 s.

Burton Stein, ***The Segmentary State: Interim Reflections***, Hermann Kulke, ed., The State in India, 1000-1700. (Delhi: Oxford University Press, 1997), pp. 134-161. 28 s.

Nicholas Dirks, ***Political Authority and Structural Change in Early South India***, in The Indian Economic and Social History Review, Vol. XIII, No. 21, pp. 125-157. 33 s.

James Heitzman, ***State Formation in South India, 850-1280***, in Kulke, The State in India, pp. 162-194. 33 s.

³⁰ B. Ch. Chhabra, ***Expansion of Indo-Aryan Culture During Pallava Rule (as evidenced by inscriptions)***, Munshiram Manoharlal, New Delhi, 1965.

³¹ K. V. Ramakrishna Rao, ***A Critical Study of the Shipping Technology of Cholas***, A paper presented during the Teradic National Conference on Bharatiya Heritage held at S. D. M. College, Ujire-Dharmasthala, from May 13th to 16th, 2008. To appear in the proceedings.

....., ***The Chola-Chinese Connection***, a paper presented during the 29th session of South Indian History Congress held at Manonmaniam Sundaranar University, Tirunelveli from Jan.30th to Feb.1, 2009, PSIH, pp.254-257.

....., ***The Shipping Technology of Cholas***, a paper presented during the 27th session of South Indian History Congress held at Rajapalayam from Feb. 2 4, 2007, PSIH, Rajapalayam, 2007, pp.326-345.

³² Audrey Elizabeth Wells, ***Virtual Reconstruction of a Seventeenth-century Portuguese Nau***, a thesis submitted to the Texas A & M University, USA, 2008.

7. The South Indian maritime trade with East African coastal countries during medieval period has been very interesting and revealing throwing light on Pallava, Colas and Kadamba maritime trade and shipping. The striking examples have been Shanga bonze lion, Brass tumbler found in Rhodesia, Limpopo-Kruger Park – sprouted vessel.
8. Sean McGrail³³ has shown that the Portuguese could have derived the ship design methods from south India, particularly from the people on the Coromandel coast, as the people from Kanyakumari to Puducherry have been using the same ancient methods of ship-building with the methods like “building by eye”, “art & craft”, “by eye”, “by arm” etc., that is, as they have established and practicing standards, they do or may not make measurements in cutting and sawing the wood, manufacturing parts and joining them together to build a boat or ship.
9. Similarly with the depiction of ships in the sculptures and on the coins, the ships used by the Satavahanas, the Pallavas, the Cholas, the Kadambas and others could be reconstructed.
10. The data and information given in the Tamil works like Kappal Sattiram, Navar Sattiram etc., could be used.

³³ Sean Macgrail, *Portuguese-derived ship design methods in southern India?*, Proceedings of International symposium on Archaeology of medieval and modern ships of Iberian-Atlantic tradition, pp.119-129. Also see at: <http://carlosmontalvao.blogspot.com/> and Pepper-wreck project etc.